Monroe Reservoir

Monroe County

2006 Supplemental Survey

Date of Survey: March 30, April 3, 10, and 12, October 2, 3, 10, 11, and 15, 2006
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Survey Objective: Document potential walleye broodstock collection locations at Monroe Reservoir through springtime electrofishing and trap netting in accordance with Percid project # D39617. This plan also included a fall walleye stocking evaluation at the lake.

Collect hybrid striped bass at Monroe Reservoir in accordance with statewide STB management plan #D39609. The primary objective of this plan is to standardize hybrid striped bass and striped bass evaluation procedures and to develop success criteria for hybrid striped bass and striped bass based on data from fall evaluations and creel surveys.

Methods: Spring walleye sampling, to evaluate Monroe Reservoir as a potential broodstock source, consisted of electrofishing the dam March 30 and again on April 3, 2006. The Lake Michigan style trap net was to be set perpendicular to the dam. Due to high water the trap net was never deployed. Two electrofishing passes were made along the dam each evening, approximately two hours apart. Walleye were measured to the nearest 0.1 in TL, checked for ripeness, sexed, and scale samples were taken for age and growth analysis. After each pass, fish were released away from the dam to avoid recaptures.

April 10 and 12, 2006 District 6 and South Fisheries Research collected hybrid striped bass for the Hybrid Striped Bass Movement project #D38613. Effort consisted of one set of a "striped bass" gill net in 16 ft of water, parallel to the dam. Data on walleye were to be noted as supplemental information for the broodstock evaluation.

In the fall of 2006, 8.0 h of electrofishing were conducted at 32 standard sample sites for the collection of hybrid striped bass and walleye. Electrofishing catch rates for

Young of Year (YOY) hybrid striped bass and walleye were documented as a measure of stocked fish survival. Hybrid striped bass and walleye were measured to the nearest 0.1 in TL and weighed to the nearest 0.01lb. Scale samples were taken for age and growth analysis. This year otoliths were collected on walleye greater than 12 in TL to validate accuracy of scale age data.

Summary:

Walleye

On March 30 and April 3 water temperature at the dam was 47 and 53 º F, respectively. The water level was 8 ft above pool (Sweeney 2006). A total of 40 walleye was collected ranging from 14.7 to 23.7 in TL. Catch per effort was 56.9 walleye/h. All walleye collected were ripe males from 3 to 9 years old.

Lake level was 9 ft above pool on April 10 and 12 while assisting South Fisheries Research collect hybrid striped bass for tagging. No walleye were collected in the gill nets. However, approximately 100 hybrid stripers were collected in a single 1 h lift. Gill netting for walleye this time of year could result in significant collateral damage to non-target hybrid striped bass.

Fall sampling occurred October 2, 3, 10, 11, and 15. The water temperature ranged from 59 to 70 º F. There were 76 walleye collected from 6.6 to 25.9 in TL. Otoliths were collected from 29 walleye 11.4 to 25.9 in TL. Legal size and greater accounted for 21% of the walleye collected. At age 3, sexual dimorphism becomes apparent in length-at-age size ranges.

In 2006, there were 494,268 walleye fingerlings stocked. Catch rate of YOY walleye was 5.6 fish/h. A fall electrofishing catch rate of seven YOY/h and greater is considered a successful spring walleye stocking (Shipman 1989). In 2005, 351,175 fingerlings were stocked. The catch rate for YOY walleye was 7.5 fish/h. Low YOY catch rates in 2006 may be attributed to high water temperatures. As water temperature decreased the catches increased for YOY walleye.

Hybrid striped bass

A total of 229 hybrid striped bass was collected from 4.1 to 25.6 in TL. The electrofishing catch rate was 29 fish/h, up from 13 fish/h in 2005. All but four hybrids were YOY and only one fish was greater than 17 in TL. On June 16, 107,500 fingerings were stocked (appendix). The catch rate for YOY hybrid stripers was 28.3 fish/h. Length range of YOY hybrids was 4.1-9.3 in TL. In 2005, 64,655 fingerlings were stocked and the catch rate for YOY hybrid stripers was 7.5 fish/h.

Literature Cited:

Shipman, S. T. 1989. Determination of walleye year class strength utilizing fall electrofishing techniques. IDNR. Indianapolis, Indiana.

Sweeney, Jr. 2006. Monroe Lake Pool Elevations in MFL 2006. US Army Corp of Engineers, Louisville District. http://www.lrl.usace.army.mil/wcds/dlbplot.asp. Accesses 1/24/2007.

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APPENDIX
(Supplemental Data)

Monroe Reservoir, hybrid striped bass stocking history from 1983 to 2006.

Year	Number stocked	fish/acre	stocking length (in)
1983	58,282	5.4	1–2
1984	100,000	9.3	1–2
1985	44,450	4.1	1–2
1986	107,000	10.0	Fry
1987	0.0		
1988	10,710	1.0	2
1989	75,250	7.0	2
1990	53,760	5.0	1-2
1991	53,750	5.0	1-2
1992	54,716	5.1	1-2
1993	90,306	8.4	1-2
1994	6,618	0.6	2.3
1995	0.0		
1996	51,500	4.8	2.2
1997	108,112	10.1	1.2
1998	161,250	15.0	1.5
1999	53,750	5.0	1.5
2000	5,732	0.5	2-3
2001	96,942	9.0	1-2
2002	115,848	10.8	1-2
2003	47,448	4.4	1-2
2004	50,000	4.7	3.5
2005	64,655	6.0	1-2
2006	107,500	10	1.23

Monroe Reservoir, walleye stocking history from 1983 to 2006.

Year	Number stocked	fish/acre	stocking length (in)
1982	73,700	6.8	1-2
1983	0		
1984	0		
1985	8,300	0.8	3
1986	48,147	4.5	1-2
1987	37,853	3.5	3
1988	573,094	53.3	1-2
1989	524,362	48.8	1-2
1990	642,392	59.8	1-2
1990	11,255,325	1,047	Fry
1991	461,102	42.9	1.5-2.5
1992	541,766	50.4	1-2
1993	523,720	48.7	1-2
1994	441,284	41.0	1-2
1995	538,467	50.1	1-2
1996	746,075	69.4	1-2
1997	801,791	74.6	1-2
1998	285,675	26.6	1-2
1999	563,030	52.4	1-2
2000	547,347	50.9	1-2
2001	293,001	27.3	1.5-2.5
2002	447,378	41.6	1-2
2003	337,789	31.4	1-2
2004	416,696	38.8	1-2
2005	351,175	32.7	1.5-2.0
2006	494,268	45.9	1.13-1.46

Lake:	Monroe Reservoir		
Date:	10/2/2006	to	10/15/2006
Species:	Walleye		
Total number:	76		
Total weight:	54.92667		
Length range:	6.6	to	25.9

	TN	GN	EF
Total #	0	0	76
Effort	0	0	8
CPUE	#DIV/0!	#DIV/0!	10

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	10	0	0	34	34	-
Quality	15	0	0	13	13	38
Preferred	20	0	0	5	5	15
Memorable	25	0	0	1	1	3
Trophy	30	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5	1	1.76	34.0		
1.5			18.0	2	2.14	34.5		
2.0			18.5			35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0	1	3.39	36.5		
4.0			20.5			37.0		
4.5			21.0	1	3.48	37.5		
5.0			21.5	1	3.18	38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5	4	0.10	23.0			39.5		
7.0	6	0.11	23.5	1	5.50	40.0		
7.5	6	0.11	24.0			40.5		
8.0	7	0.11	24.5			41.0		
8.5	9	0.18	25.0			41.5		
9.0	4	0.25	25.5	1	6.25	42.0		
9.5	6	0.27	26.0			42.5		
10.0	3	0.29	26.5			43.0		
10.5	1	0.33	27.0			43.5		
11.0	1	0.45	27.5			44.0		
11.5	1	0.58	28.0			44.5		
12.0	3	0.50	28.5			45.0		
12.5	3	0.61	29.0			45.5		
13.0			29.5			46.0		
13.5	6	0.85	30.0			46.5		
14.0	3	1.04	30.5			47.0		
14.5			31.0			47.5		
15.0	1	1.05	31.5			48.0		
15.5			32.0			48.5		
16.0	3	1.40	32.5			49.0		
16.5	1	1.33	33.0			49.5		
17.0			33.5			50.0		

Lake: Monroe Reservoir
Date: 10/2/2006 to 10/15/2006
Species: Walleye

Length group (in)	Total # number	Sub-sample	Age 1	2	3	4	5	6	7	8	9	10	11
6.5	4												
7.0	6												
7.5	6												
8.0	7												
8.5	9												
9.0	4												
9.5	6												
10.0	3												
10.5	1	1	1										
11.0	1	1	1										
11.5	1	1	1										
12.0	3	3	1	1	1								
12.5	3	3	2		1								
13.0													
13.5	6	6	5	1									
14.0	3	3	3										
14.5													
15.0	1	1	1										
15.5													
16.0	3	3		2			1						
16.5	1	1		1									
17.0													
17.5	1	1			1								
18.0	2	2			1			1					
18.5													
19.0													
19.5													
20.0	1	1							1				
20.5													
21.0	1	1							1				
21.5	1	1							1				
22.0													
22.5													
23.0													
23.5	1	1						1					
24.0													
24.5													
25.0													
25.5	1	1											1
26.0													
Total	76	31	15	5	4	0	1	2	3	0	0	0	1

Lake: Monroe Reservoir
Date: 10/2/2006 to 10/15/2006
Species: Walleye

Age	Number	Mean TL	Var	SE	Lo 95%CI	Up 95%CI
1	15	13.2	1.59	0.33	12.6	13.9
2	5	15.1	3.83	0.87	13.3	16.8
3	4	15.3	10.17	1.59	12.1	18.4
4						
5	1	16.3	N/A	N/A	N/A	N/A
6	2	21.0	15.13	2.75	15.5	26.5
7	3	21.1	0.58	0.44	20.2	22.0
8						
9						
10						
11	1	25.8	N/A	N/A	N/A	N/A

					TN	GN	EF
Lake:	Monroe Reservoir			Total #	0	0	229
Date:	10/2/2006	to	10/15/2006	Effort	0	0	8
Species:	White bass x striped bass			CPUE	#DIV/0!	#DIV/0!	29
Total number:	229						
Total weight:	21.51						
Length range:	4.1	to	25.6				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	8	0	0	14	14	-
Quality	12	0	0	2	2	14
Preferred	15	0	0	1	1	7
Memorable	20	0	0	1	1	7
Trophy	25	0	0	1	1	7

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0	2	0.02	20.5			37.0		
4.5	11	0.02	21.0			37.5		
5.0	38	0.03	21.5			38.0		
5.5	49	0.06	22.0			38.5		
6.0	38	0.09	22.5			39.0		
6.5	51	0.12	23.0			39.5		
7.0	21	0.12	23.5			40.0		
7.5	5	0.17	24.0			40.5		
8.0	2	0.27	24.5			41.0		
8.5	7	0.29	25.0			41.5		
9.0	1	0.37	25.5	1	0.00	42.0		
9.5			26.0			42.5		
10.0			26.5			43.0		
10.5			27.0			43.5		
11.0	1	0.00	27.5			44.0		
11.5	1	0.60	28.0			44.5		
12.0	1	0.64	28.5			45.0		
12.5			29.0			45.5		
13.0			29.5			46.0		
13.5			30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

Lake: Monroe Reservoir
Date: 10/2/2006 to 10/15/2006
Species: White bass x striped bass

Length	Total #	Sub-	Age								
group (in)	number	sample	1	2	3	4	5	6	7	8	9
3.5											
4.0	2										
4.5	11										
5.0	38										
5.5	49										
6.0	38										
6.5	51										
7.0	21										
7.5	5										
8.0	2										
8.5	7										
9.0	1										
9.5											
10.0											
10.5											
11.0	1										
11.5	1	1	1								
12.0	1	0	1								
12.5											
13.0											

25.0											
25.5	1										
Total	229	1	2	0	0	0	0	0	0	0	0